

CLAIMS

1. A discharge valve for CO₂ pressure cylinders, comprising a flow passage (8) for CO₂ gas, a valve element (10) which is actuatable from the exterior and which can assume various positions and which in at least one of said positions closes the flow passage (8) and in at least one other of its positions opens the flow passage (8), and connecting means (6, 5) for fixedly and sealingly connecting the discharge valve (100) to a CO₂ pressure cylinder, wherein provided in the flow passage (8) is a flow resistance (31, 32, 33) which is independent of the valve opening which is openable by the valve element (10), characterised in that the flow resistance (31, 32, 33) is such that at a temperature of 20°C and a CO₂ gas flow rate of 0.5 g/s it causes a pressure drop of at least 1 bar and preferably of more than 3 bars.
2. A discharge valve as set forth in claim 1 characterised in that the pressure drop is more than 5 bars and preferably more than 10 bars under the specified conditions.
3. A discharge valve as set forth in claim 1 or claim 2 characterised in that the pressure drop is at most 50 bars, preferably less than 40 bars and particularly preferably less than 30 bars.
4. A discharge valve as set forth in one of claims 1 through 3 characterised in that the pressure drop caused under the conditions recited in claim 2 at the flow resistance is between 12 and 15 bars.
5. A discharge valve as set forth in one of claims 1 through 4 characterised in that it has a check valve (15, 16, 17) which is independent of the discharge valve (10) to be actuated and which in the intake direction opens a by-pass (35) by-passing the flow resistance (31) and closes in the discharge flow direction.

6. A discharge valve as set forth in claim 5 characterised in that the check valve is resiliently biased in the closing direction.

7. A discharge valve as set forth in one of claims 1 through 6 characterised in that the flow resistance is a sintered body (31, 32, 33) or a pressure-resistant diaphragm.

8. A discharge valve as set forth in claim 7 characterised in that the flow resistance at least partially comprises plastic material or ceramic.

9. A discharge valve as set forth in claim 7 characterised in that the flow resistance comprises metal.

10. A discharge valve as set forth in one of claims 7 through 9 in which the flow resistance comprises a sintered body characterised in that the sintered body has an average pore size in the range of between 1 and 10 μm .

11. A discharge valve as set forth in claim 10 characterised in that it is of a porosity of between 10 and 80%, preferably between 10 and 40%.

12. A discharge valve as set forth in one of claims 1 through 11 characterised in that the flow resistance (32, 33) is in the form of a valve body movably accommodated in a valve seat (36).

13. A discharge valve as set forth in claim 12 characterised in that the flow resistance (32, 33) is biased in the CO_2 discharge flow direction.

14. A discharge valve as set forth in one of claims 12 and 13 characterised in that the flow resistance (32, 33) has a substantially tapered surface for reception in a valve seat (36).

15. A discharge valve as set forth in one of claims 1 through 14 wherein the valve element (10) is arranged on a side of the discharge valve which is remote from the CO₂ pressure cylinder, characterised in that the flow resistance is arranged on the side of the discharge valve, which is towards the CO₂ pressure cylinder.

16. An attachment portion for a discharge valve for CO₂ pressure cylinders, characterised in that the attachment portion (30, 30', 30'') can be fixedly and sealingly connected to the discharge valve and has a flow resistance (31, 32, 33) as set forth in one of claims 1 through 16.

17. An attachment portion for a discharge valve as set forth in claim 16 wherein at its end towards the CO₂ pressure cylinder the discharge valve has a female screwthread for receiving a support spring (9) for the valve element (10), characterised in that the flow resistance (31, 32, 33) is arranged in an attachment portion with a male screwthread which corresponds to the female screwthread at the inner end of the discharge valve (100).

18. An attachment portion as set forth in claim 16 or claim 17 characterised in that the maximum outside diameter of the attachment portion (34, 34', 34'') is smaller than the inside diameter of a receiving screwthread of the pressure cylinder for connection to the discharge valve.

19. An attachment portion as set forth in one of claims 16 through 18 characterised in that on its side remote from the discharge valve the attachment portion (34, 34', 34'') has a female screwthread whose diameter and pitch correspond to the female screwthread at the inner end of the discharge valve body.